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**Colour plates: "Iskender-nāme" by Aḥmedī (1334/35—1412/13), MS C133 from the collection
of St. Petersburg Branch of the Institute of Oriental Studies, Russian Academy of Sciences (see p. 47—61).**

F r o n t   c o v e r :

Fol. 58a. Iskender and Gülshah, 10.7 × 10.9 cm.

B a c k   c o v e r :

Plate 1. Fol. 93b. Iskender Slaying a Dragon, 10.7 × 13.2 cm.
Plate 2. Fol. 140b. The Poet Aḥmedī (?), 10.7 × 14.3 cm.
Plate 3. Fol. 249b. The Religious Dispute in the Presence of Sultan Orkhan, 10.7 × 14.7 cm.
Plate 4. Fol. 254a. The Murder of Sultan Murad I, 10.7 × 14.3 cm.

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ADOBE ACROBAT 2.0 AS A MEDIUM FOR ELECTRONIC PUBLISHING IN ARABIC STUDIES: SOME INTERIM REMARKS (MACINTOSH VERSION)

A computer program that prints any Arabic font perfectly, handles Latin diacritic fonts without problems, and functions on virtually every platform would seem to be more than one could ask for today. But this is what Adobe has come close to providing us with. My comments on this software are necessarily of a tentative nature. I have worked only a short time with Adobe Acrobat, and an upgrade which may eliminate some of the problems mentioned here is scheduled to be released soon. I am indebted to Pia Haugerud of Software Plus A/S, Oslo, for help with a number of problems I encountered while preparing this report.

Adobe Acrobat technology is already beginning to be used widely in electronic publishing in Western languages, not only for articles but also for longer works. The PDF (portable document format) files that the Acrobat family of programs produce and read are not a substitute for the HTML files that are the standard on the World Wide Web. HTML files are hardly larger than text files, and most images they may "contain" are in fact linked documents that can be skipped when net communication is slow. PDF documents, on the other hand, tend to be large, and the more fonts and images they have embedded in them, the larger they get. Usually it is possible to read them on the Internet, but it is best to download them to a local network or to one's own personal computer.

Unlike HTML files, PDF files offer all the formatting and detail of printed documents, and when printed out, they can be indistinguishable from a printed version of the same document. This holds not only for images and colors or for diagrams and tables but also for Arabic text and Latin diacritic fonts, regardless of platform. Any program that can produce a PostScript file, whether word processors like Word or Nisus or page layout programs like al-Nashir al-Sahafi, can, with the help of Adobe Acrobat, produce an identical PDF file that can be displayed on screen or printed out on the Macintosh, Unix, Windows, and DOS platforms. Pagination and line definition will be the same on all platforms.

For those who only wish to view and search PDF documents, access to the necessary software is free. Adobe Acrobat Reader, which can display documents on screen and print them out exactly as they look in the original word processor or page layout version, and which moreover possesses a simple searching tool, can be downloaded without charge from Adobe's Web site (http://www.adobe.com/). Acrobat Reader is also scheduled to be packaged together with the next version of the widely used Internet browser Netscape.

The companion program Acrobat Exchange permits, with the help of the accompanying "Writer", the creation of PDF files directly from simpler word processor files. It also enables one to create links, both to Acrobat and other files, including Web (HTML) documents, recorded sounds, and video clips. Even if one prefers to read from paper, therefore, the screen version of a document will in some cases have to be open to take advantage of these added "footnoting" dimensions. Exchange likewise makes it possible to perform more complex searching, including some Boolean searching, when a search index has been produced with the separately sold program Acrobat Catalog. Acrobat Exchange is not recommended by Adobe for producing PDF documents from page layout files, nor, as far as I can determine, is it suited for producing them from word processor files containing Arabic text or Latin diacritic fonts.

Acrobat Distiller is capable of producing PDF files from far more complicated originals, including page layout files. This program "distills" the much smaller PDF files from PostScript files, while must be produced first. Both Distiller and Exchange can embed fonts used in the original computer file, but Distiller, according to the manual (p. 36), does it more economically. Distiller is in any event the only option of the two that is relevant for Arabic studies at the present time, since it is the only one that can satisfactorily reproduce the necessary scripts and diacritics. PDF files from either Distiller or Exchange can be read by the Reader.

The array of fonts that can be distributed without restriction in PDF files is impressive. Adobe fonts as well as fonts owned by Linotype-Hell AG, International Typeface Corporation, Agfa-Gevaert, Fundición Typográfica Neufville, and Monotype Typography, Ltd., may be embedded in Adobe PDF files and distributed freely. Permission may be needed to distribute PDF files containing other embedded fonts, and persons using fonts from other sources should consult the font supplier.

What are the drawbacks? Essentially they are two: the normally rather considerable size of PDF documents and some unsolved problems with searching for and copying Arabic text and, in many cases, Latin diacritics.

The PDF documents that Acrobat Distiller creates from PostScript files, or from PC "PRN" files, tend to be cumbersomely large if fonts are embedded in them, especially "unusual" fonts like Arabic. It takes a great deal of time to download such files from the Internet, and a number of operations, including searching, will be slow. However PDF files can be very small indeed without the fonts, often not much larger than the original word processor file. Fortunately one has to open only a single file with the appropriate fonts embedded (it does not have to remain open) for Acrobat Reader properly to display Arabic and European diacritic fonts in files that do not have them embed-

ded. Consequently only one file in a group has to be big. Screen display of Arabic, which can be irritatingly slow on less powerful machines, does not seem to speed up with the reduction of file size. However it should be possible to achieve some improvement by raising the memory assigned to the Adobe Type Manager program (the full version ATM 3.8, or ATM 3.8 LE, which comes with the Acrobat software) to 1 Mb. This is done from within ATM, not from the Macintosh "Information" window. One may also raise the memory allowed for Acrobat Reader from 2 to 4 Mb.

There is a particular problem with Arabic, in that Distiller automatically embeds, according to the manual, "non-ISO Type 1 fonts — that is, fonts with nonstandard character sets" One must specifically instruct the program not to embed the Arabic fonts in order to reduce the size of the document. Otherwise the file may run as much as 40 kb to 50 kb per page. Instructing the program not to embed fonts works as long as Distiller is running on the platform on which the original file was produced, but I have not yet managed to get it to work with Arabic fonts in files imported from another platform. (I have "distilled" some Word for Arabic 6.0 PostScript and PRN files from a PC. The problem may be that I failed properly to identify the PC font names.)

The other major drawback in Acrobat Reader and Acrobat Exchange is that the word or text string search feature performs only imperfectly with special Latin characters in upper ASCII, such as Orientalist diacritics, and hardly at all with Arabic characters. For reasons I have not been able to determine, upper ASCII searching in Exchange seems to be slightly more effective than in Reader. (My comments here are limited to the word/text string search feature built into both of these programs. They do not necessarily apply to the separate search engine made by Verity which comes packaged with Exchange and which requires indexes prepared with Adobe Catalog, a program I have not used.) Typing a character in the Find dialogue box does not always convey the right character to the computer. Copying and pasting works somewhat better but is still unreliable. Moreover the latter is an unwieldy procedure, since single words are the smallest units that can be copied in Acrobat. It should be pointed out, moreover, that the search feature treats each variant of an Arabic letter and each ligature contained in the character set as a separate character. The fact that the various shapes are not reduced to their common denominators augments the diffi-

culties associated with searching Arabic text exponentially. Future improvements in the program, or the arrival of Unicode, will presumably help to remedy this problem.

A serious related problem is that special characters, and more importantly Arabic text, cannot be copied out of an Acrobat PDF file and pasted into a word processor document with satisfactory results.

One quirk is that the Arabic fonts used in PDF files produced on a Macintosh have to be disabled or removed from the Macintosh system folder while reading or printing out. Another is that certain diacritics and Arabic letters do not show up on the Macintosh screen (but only if the original document was produced on a Macintosh), although they print out with no trouble. The PC displays on screen and prints out both its own Arabic and that produced on a Macintosh with no problems. (These remarks apply only to Macintosh and PC files converted to PDF on a Macintosh. I have not tried converting files from either platform on a PC.)

CONCLUSION

Adobe Acrobat 2.0 PDF software makes it possible to display (usually) and print out (always) not only graphics and tables but also all relevant special characters and Arabic type styles. It should moreover be possible to keep the size of the majority of files relatively small, provided readers have at least one document in their possession which contains all the necessary fonts. PDF files relating to Arabic studies are nevertheless often likely to be too large to be viewed conveniently over the Internet. In many cases it will be advisable to download files before viewing them. Given the difficulties presently involved in searching for or copying Arabic and Latin diacritics in PDF files, material published in this format should perhaps for the time being be accompanied by a parallel HTML or text document in which Arabic letters and special Latin characters are identified by discrete codes.

This review was first made available on the Internet on the lists Reader (31.08.95) and Itisalat (15.09.95), and the original is preserved in electronic form and in hard copy in the Archive of Electronic Publications of the Section for Middle Eastern Languages and Cultures, University of Bergen (http://www.hf-fak.uib.no/institutter/midtspraak/aep.htm).

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